Remarks

Rejections Under 35 U.S.C. Section 103(a)

Claims 1, 2 through 11, and 13 through 20 are rejected under 35 U.S.C. Section 103(a) as being unpatentable over Igarashi, U.S. Patent No. 5,348,779, in view of Li, U.S. Patent No. 6,046,262, and Biggs, U.S. Patent No. 4,436,774. These rejections are traversed.

Applicants urge that no motivation exists to combine the teachings of Iragashi and Li to arrive at the present claims.

Iragashi teaches a hose and hose nipple combination wherein a sealing layer of chlorinated elastomer is used to bond the hose 14 and nipple 12 (Column 9, Lines 7 through 22). In one embodiment, sealing layer 16 overlays nipple 12 (Fig. 5), and in another embodiment sealing layer 20 overlays resin layer 2 (Fig. 6). The sealing layer may comprise chlorosulphonated polyethylene or chlorinated polyethylene rubbers (Column 9, Lines 48 through 53) and hydrotalcite (Column 9, Lines 23 through 47). Nowhere does Iragashi teach that the sealing layer may comprise polychloroprene; the only mention of polychloroprene in Iragashi is directed to its use in the cover layer of a prior art hose (Column 1, Lines 31 through 33). By contrast, Iragashi teaches a sealing layer 16 or 20 that may comprise chlorosulphonated polyethylene rubber or chlorinated polyethylene rubber (Column 9, Lines 48 through 53) and hydrotalcite (Column 9, Lines 27 through 30). The sealing layer 16 is provided on the outer surface of nipple 12 to adhere nipple 12 to layer 2 of hose 14 (Figure 5); alternatively sealing layer 20 is provide on the inner surface of hose 18 to adhere the nipple (Figure 6). It would be clear to one skilled in the art from the teaching of Iragashi that such a sealing layer composition is useful for adhering a hose to an ostensibly metal hose nipple. One skilled in the art would not understand that such a composition may be as a rubber composition to adhere to textile fiber as in the present claims, nor would one skilled in the art understand that polychloroprene could be substituted for the chlorosulphonated polyethylene rubber or chlorinated polyethylene rubber.

Nowhere does Iragashi teach nor make obvious a composite material as recited in claim 1. Iragashi does not teach nor make obvious a vulcanizable rubber composition comprising

polychloroprene and hydrotalcite at all; Iragashi teaches only the use of chlorosulphonated polyethylene or chlorinated polyethylene rubbers with hydrotalcite as a nipple adhesive for a hose. Moreover, Iragashi does not teach nor make obvious a composite material comprising textile fibers having distributed over surface portions thereof an RFL adhesive and a vulcanizable rubber composition, wherein the vulcanizable rubber composition comprises 50 to 100 parts by weight of polychloroprene rubber, 0 to 50 parts by weight of at least one additional rubber, and from about 0.1 to 40 parts by weight of a hydrotalcite.

Li is cited by the Examiner as teaching the use of RFL with fiber reinforcement. Applicants urge that such a combination does not arrive at the present claims. Again, Iragashi simply does not teach a polychloroprene and hydrotalcite rubber composition at all, let alone in a composite with a fiber reinforcement treated with an RFL adhesive. Nor does Li teach nor make obvious a composite material as in the present claims; nowhere does Li suggest that an RFL treated fiber may be used in a composite material with a rubber composition comprising polychloroprene and hydrotalcite. At best, Li teaches that an RFL treated fiber may be used with natural rubber, polyurethane rubber, styrene-butadiene rubber, acrylonitrile-butadiene rubber, butyl rubbers, fluorinated rubbers, and EPDM (Column 3, Lines 5 through 10). Applicants urge that one skilled in the art would not be motivated to substitute the RFL treated fibers of Li for the fiber layer 6 of Iragashi, and even if Iragashi and Li were combined one would not arrive at the present claims; there is simply no teaching in either Iragashi or Li alone or in combination directed to a rubber composition comprising polychloroprene and hydrotalcite.

Applicants urge that since no motivation exists to combine Iragashi and Li, and even if combined, such a combination would not arrive at the present claims, prima facie obviousness has not been established.

Claims 2 and 12 are rejected under 35 U.S.C. Section 103(a) as being unpatentable over Igarashi in view of Chu and further in view of Biggs. Applicants urge that the arguments applied to the rejection of claims 1 and 11 over Iragashi in view of Chu apply equally to claims 2 and 12.

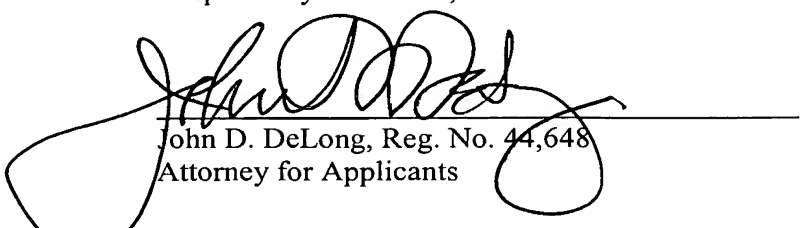
Applicants further urge that even if prima facie obviousness exists, the present specification

includes evidence of unexpected results sufficient to overcome prima facie obviousness. Iragashi teaches that the acid receptive agents used therein may equally be selected from MgO and hydrotalcite, among others, and that MgO is preferably used (Column 9, Lines 27 through 30). However, as noted in the present disclosure at Page 2, Lines 4 through 8, while MgO is often used as an acid acceptor (i.e., acid receptive agent) in polychloroprene compounds, its use generally compromises adhesion in polychloroprene composites. Thus, while Iragashi teaches the preferential use of MgO, the present specification teaches that its use is undesirable. Moreover, in the Examples of the present specification it is clearly demonstrated that polychloroprene composites made using hydrotalcite in place of MgO show unexpectedly and surprisingly higher adhesion between the polychloroprene composition and the fiber reinforcement of the composite. As seen in Tables 3 and 4, Sample 9 made with hydrotalcite showed a substantial increase in adhesion of the polychloroprene compound to nylon fabric as compared to Sample 7 made with MgO; the increase in adhesion for Sample 9 vs. Sample 7 was 248 vs. 155 N/25 mm, for a increase of 60 percent. This increase in adhesion for the polychloroprene composite using hydrotalcite instead of MgO is clearly unexpected and surprising in view of the closest prior art, Igarashi, wherein it is taught that MgO is preferred over hydrotalcite. Applicants urge that this showing of unexpected results is sufficient to overcome prima facie obviousness of the claims.

Conclusion

Applicants urge that the claims are now patentable over the cited art and respectfully request allowance of the claims.

Respectfully submitted,



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